General

Guideline Title

Physical restraints and side rails in acute and critical care settings. In: Evidence-based geriatric nursing protocols for best practice.

Bibliographic Source(s)

Bradas CM, Sandhu SK, Mion LC. Physical restraints and side rails in acute and critical care settings. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editor(s). Evidence-based geriatric nursing protocols for best practice. 4th ed. New York (NY): Springer Publishing Company; 2012. p. 229-45.

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

Levels of evidence (I–VI) are defined at the end of the "Major Recommendations" field.

Parameters of Assessment

- Assess for underlying cause(s) of agitation and cognitive impairment leading to patient-initiated device removal (see the National Guideline Clearinghouse [NGC] summaries of the Hartford Institute for Geriatric Nursing guidelines Assessing cognitive functioning, Depression in older adults, Recognition and management of dementia, and Delirium).
    - If abrupt change in perception, attention, or level of consciousness:
        - Assess for life-threatening physiologic impairments.
        - Respiratory, neurologic, fever and sepsis, hypoglycemia and hyperglycemia, alcohol or substance withdrawal, and fluid and electrolyte imbalance
        - Notify physician of change in mental status and compromised physiologic status.
    - Differential assessment (interdisciplinary)
        - Obtain baseline or premorbid cognitive function from family and caregivers.
        - Establish whether the patient has history of dementia or depression.
        - Review medications to identify drug–drug interactions, adverse effects.
        - Review current laboratory values.
- Assess fall risk: intrinsic, extrinsic, and situational factors (see the NGC summary of the Hartford Institute for Geriatric Nursing guideline Fall prevention).
- Assess for medications that may cause drug–drug interactions and adverse drug effects (see the NGC summary of the Hartford Institute for

Geriatric Nursing guideline Reducing adverse drug events in older adults).

Nursing Care Strategies

- Interventions to minimize or reduce patient-initiated device removal
  - Disruption of any device
    - Reassess daily to determine whether it is medically possible to discontinue device; try alternative mode of therapy (DuBose et al., 2010 [Level III]; Mion et al., 2001 [Level III]; Nirmalan et al., 2004 [Level V]).
    - For mild-to-moderate cognitive impairment, explain device and allow patient to feel under nurse's guidance.
  - Attempted or actual disruption: ventilator
    - Determine underlying cause of behavior for appropriate medical and/or pharmacologic approach.
    - More secure anchoring
    - Appropriate sedation and analgesia protocol
    - Start with less restrictive means: mitts, elbow extenders.
  - Attempted or actual disruption: nasogastric tube
    - If for feeding purposes, consult with nutritionist and speech or occupational therapist for swallow evaluation.
    - Consider gastrostomy tube for feeding as appropriate if other measures are ineffective.
    - Anchoring of tube, either by taping techniques or commercial tube holder
    - If restraints are needed, start with least restrictive: mitts, elbow extenders.
  - Attempted or actual disruption: intravenous (IV) lines
    - Commercial tube holder for anchoring
    - Long-sleeved robes, commercial sleeves for arms
    - Consider Hep-Lock and cover with gauze.
    - Taping, securement of IV line under gown, sleeves
    - Keep IV bag out of visual field.
    - Consider alternative therapy: oral fluids, drugs.
  - Treatment (interdisciplinary)
    - Treat underlying disorder(s).
    - Judicious, low dose use of medication if warranted for agitation
    - Communication techniques: low voice, simple commands, reorientation
    - Frequent reassurance and orientation
    - Surveillance and observation: Determine whether family member(s) willing to stay with patient; move patient closer to nurses' station; perform safety checks more frequently; redeploy staff to provide one-on-one observation if other measure is ineffective
  - Attempted or actual disruption: bladder catheter
    - Consider intermittent catheterization if appropriate.
    - Proper securement, anchoring to leg. Commercial tube holders available.
- Interventions to reduce fall risk
  - Patient-centered interventions
    - Supervised, progressive ambulation even in intensive care units (ICU) (Inouye et al., 1999 [Level II]; Truong et al., 2009 [Level I])
    - Physical therapist/occupational therapist (PT/OT) consultation: weakened or unsteady gait, trunk weakness, upper arm weakness
    - Provide physical aids in hearing, vision, walking.
    - Modify clothing: skidproof slippers, slipper socks, robes no longer than ankle length.
    - Bedside commode if impaired or weakened gait
    - Postural hypotension: behavioral recommendations such as ankle pumps, hand clenching, reviewing medications, elevating head of bed
  - Organizational interventions (Mion et al., 2001 [Level III])
    - Examine pattern of falls on unit (e.g., time of day, day of week).
    - Examine unit factors that can contribute to falls that can be ameliorated (e.g., report in back room versus walking rounds to improve surveillance).
    - Restructure staff routines to increase number of available staff throughout the day.
    - Set and maintain toilet schedules.
    - Install electronic alarms for wanderers.
    - Consider bed and chair alarms (note: no to little evidence on effectiveness).

        - Moving patient closer to nurse station
        - Increased checks on high-risk patients
    - Environmental interventions (Amato, Salter, & Mion, 2006 [Level III]; Landefeld et al., 1995 [Level II])
        - Keep bed in low, locked position.
        - Safety features, such as grab bars, call bells, bed alarms, are in good working order
        - Ensure bedside tables and dressers are in easy reach.
        - Clear pathways of hazards.
        - Bolster cushions to assist with posture, maintain seat in chair.
        - Adequate lighting, especially bathroom at night
        - Furniture to facilitate seating: reclining chairs (note: may be considered restraint in some instances), extended arm rests, high back
- Review medications using Beers Criteria for potentially inappropriate medications.

Follow-up Monitoring of Condition

- Monitor restraint incidence comparing benchmark rates over time by unit.
- Document prevalence rate of restraint use on an ongoing basis.
- Focus education on assessment and prevention of delirium and falls.
- Consult with interdisciplinary members to identify additional safety alternatives.

Definitions:

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

Level VI: Opinions of respected authorities/consensus panels

AGREE Next Steps Consortium (2009). Appraisal of guidelines for research & evaluation II. Retrieved from http://www.agreetrust.org/?o=1397 .

Adapted from: Melnyck, B. M. & Fineout-Overholt, E. (2005). Evidence-based practice in nursing & health care: A guide to best practice. Philadelphia, PA: Lippincott Williams & Wilkins and Stetler, C.B., Morsi, D., Rucki, S., Broughton, S., Corrigan, B., Fitzgerald, J., et al. (1998). Utilization-focused integrative reviews in a nursing service. Applied Nursing Research, 11(4) 195-206.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Harm due to physical restraints and side rails

Guideline Category

Evaluation

Management

Prevention

Risk Assessment

Clinical Specialty

Critical Care

Family Practice

Geriatrics

Nursing

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Hospitals

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To provide a standard of practice protocol to eliminate the use of physical restraints and side rails in acute and critical care settings

Target Population

Adults age 65 and older

Interventions and Practices Considered

Assessment/Evaluation/Risk Assessment

1. Assessment for underlying cause(s) of agitation and cognitive impairment leading to patient-initiated device removal
2. Assessment of fall risk: intrinsic, extrinsic, and situational factors
3. Assessment for medications that may cause drug–drug interactions and adverse drug effects

Management

1. Minimization or reduction of patient-initiated device removal
2. Interventions to reduce fall risk:
    - Patient-centered interventions
    - Organizational interventions
    - Environmental interventions
3. Review medications using Beers Criteria for potentially inappropriate medications
4. Follow-up monitoring of condition

Major Outcomes Considered

- Use of restraints
- Harm from use of restraints

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Although the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument (described in Chapter 1 of the original guideline document, *Evidence-based Geriatric Nursing Protocols for Best Practice,* 4th ed.) was created to critically appraise clinical practice guidelines, the process and criteria can also be applied to the development and evaluation of clinical practice protocols. Thus, the AGREE instrument has been expanded (i.e., AGREE II) for that purpose to standardize the creation and revision of the geriatric nursing practice guidelines.

The Search for Evidence Process

Locating the best evidence in the published research is dependent on framing a focused, searchable clinical question. The PICO format—an acronym for population, intervention (or occurrence or risk factor), comparison (or control), and outcome—can frame an effective literature search. The editors enlisted the assistance of the New York University Health Sciences librarian to ensure a standardized and efficient approach to collecting evidence on clinical topics. A literature search was conducted to find the best available evidence for each clinical question addressed. The results were rated for level of evidence and sent to the respective chapter author(s) to provide possible substantiation for the nursing practice protocol being developed.

In addition to rating each literature citation as to its level of evidence, each citation was given a general classification, coded as "Risks," "Assessment," "Prevention," "Management," "Evaluation/Follow-up," or "Comprehensive." The citations were organized in a searchable database for later retrieval and output to chapter authors. All authors had to review the evidence and decide on its quality and relevance for inclusion in their chapter or protocol. They had the option, of course, to reject or not use the evidence provided as a result of the search or to dispute the applied level of evidence.

Developing a Search Strategy

Development of a search strategy to capture best evidence begins with database selection and translation of search terms into the controlled vocabulary of the database, if possible. In descending order of importance, the three major databases for finding the best primary evidence for most clinical nursing questions are the Cochrane Database of Systematic Reviews, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Medline or PubMed. In addition, the PsycINFO database was used to ensure capture of relevant evidence in the psychology and behavioral sciences literature for many of the topics. Synthesis sources such as UpToDate® and British Medical Journal (BMJ) Clinical Evidence and abstract journals such as *Evidence Based Nursing* supplemented the initial searches. Searching of other specialty databases may have to be warranted depending on the clinical question.

It bears noting that the database architecture can be exploited to limit the search to articles tagged with the publication type "meta-analysis" in Medline or "systematic review" in CINAHL. Filtering by standard age groups such as "65 and over" is another standard categorical limit for narrowing for relevance. A literature search retrieves the initial citations that begin to provide evidence. Appraisal of the initial literature retrieved may lead the searcher to other cited articles, triggering new ideas for expanding or narrowing the literature search with related descriptors or terms in the article abstract.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

Level VI: Opinions of respected authorities/consensus panels

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Adapted from: Melnyck, B. M. & Fineout-Overholt, E. (2005). Evidence-based practice in nursing & health care: A guide to best practice. Philadelphia, PA: Lippincott Williams & Wilkins and Stetler, C.B., Morsi, D., Rucki, S., Broughton, S., Corrigan, B., Fitzgerald, J., et al. (1998). Utilization-focused integrative reviews in a nursing service. Applied Nursing Research, 11(4) 195-206.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Not stated

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Not stated

Evidence Supporting the Recommendations

References Supporting the Recommendations

Amato S, Salter JP, Mion LC. Physical restraint reduction in the acute rehabilitation setting: a quality improvement study. Rehabil Nurs. 2006 Nov-Dec;31(6):235-41. PubMed

Dubose J, Teixeira PG, Inaba K, Lam L, Talving P, Putty B, Plurad D, Green DJ, Demetriades D, Belzberg H. Measurable outcomes of quality improvement using a daily quality rounds checklist: one-year analysis in a trauma intensive care unit with sustained ventilator-associated pneumonia reduction. J Trauma. 2010 Oct;69(4):855-60. PubMed

Inouye SK, Bogardus ST Jr, Charpentier PA, Leo-Summers L, Acampora D, Holford TR, Cooney LM Jr. A multicomponent intervention to prevent delirium in hospitalized older patients. N Engl J Med. 1999 Mar 4;340(9):669-76. PubMed

Landefeld CS, Palmer RM, Kresevic DM, Fortinsky RH, Kowal J. A randomized trial of care in a hospital medical unit especially designed to improve the functional outcomes of acutely ill older patients. N Engl J Med. 1995 May 18;332(20):1338-44. PubMed

Mion LC, Fogel J, Sandhu S, Palmer RM, Minnick AF, Cranston T, Bethoux F, Merkel C, Berkman CS, Leipzig R. Outcomes following physical restraint reduction programs in two acute care hospitals. Jt Comm J Qual Improv. 2001 Nov;27(11):605-18. PubMed

Nirmalan M, Dark PM, Nightingale P, Harris J. Editorial IV: physical and pharmacological restraint of critically ill patients: clinical facts and ethical considerations. Br J Anaesth. 2004 Jun;92(6):789-92. PubMed

Truong AD, Fan E, Brower RG, Needham DM. Bench-to-bedside review: mobilizing patients in the intensive care unit--from pathophysiology to clinical trials. Crit Care. 2009;13(4):216. [41 references] PubMed

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for selected recommendations (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Patient

- Freedom from restraints
- Physical restraints used only as a last resort

Nursing Staff

- Accurate assessment of patients who are at risk for use of physical restraint
- Use of physical restraints only when less restrictive mechanisms have been determined to be ineffective
- Increased use of nonrestraint, safety alternatives

Organization

- Decrease in incidence and/or prevalence of restraints
- No increase of falls, agitated behavior, and patient-initiated removal of medical devices

Potential Harms

Not stated

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Chart Documentation/Checklists/Forms

Mobile Device Resources

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Living with Illness

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2012

Guideline Developer(s)

Hartford Institute for Geriatric Nursing - Academic Institution

Guideline Developer Comment

The guidelines were developed by a group of nursing experts from across the country as part of the Nurses Improving Care for Health System Elders (NICHE) project, under sponsorship of the Hartford Institute for Geriatric Nursing, New York University College of Nursing.

Source(s) of Funding

Hartford Institute for Geriatric Nursing

Guideline Committee

Not stated

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the Hartford Institute for Geriatric Nursing Web site .

Copies of the book *Evidence-Based Geriatric Nursing Protocols for Best Practice*, 4th edition: Available from Springer Publishing Company, 536 Broadway, New York, NY 10012; Phone: (212) 431-4370; Fax: (212) 941-7842; Web: www.springerpub.com .

Availability of Companion Documents

The following are available:

- *Try This*® - issue 3: Mental status assessment of older adults: the Mini-Cog. New York (NY): Hartford Institute for Geriatric Nursing; 2 p. 2013. Electronic copies: Available in Portable Document Format (PDF) from the Hartford Institute of Geriatric Nursing Web site .
- *Try This*® - issue 13: The Confusion Assessment Method (CAM). New York (NY): Hartford Institute for Geriatric Nursing; 2 p. 2012. Electronic copies: Available in PDF from the Hartford Institute of Geriatric Nursing Web site .
- *Try This*® - issue 25: The Confusion Assessment Method for the Intensive Care Unit (CAM-ICU). New York (NY): Hartford Institute for Geriatric Nursing; 2 p. 2012. Electronic copies: Available in PDF from the Hartford Institute of Geriatric Nursing Web site .
- *Try This*® - issue 8: Fall risk assessment for older adults: the Hendrich II Fall Risk Model. New York (NY): Hartford Institute for Geriatric Nursing; 2 p. 2013. Electronic copies: Available in PDF from the Hartford Institute of Geriatric Nursing Web site .
- *Try This*® - issue 7: Pain assessment for older adults. New York (NY): Hartford Institute for Geriatric Nursing; 2 p. 2012. Electronic copies: Available in PDF from the Hartford Institute of Geriatric Nursing Web site .
- *Try This*® - issue D2: Assessing pain in older adults with dementia. New York (NY): Hartford Institute for Geriatric Nursing; 2 p. 2012. Electronic copies: Available in PDF from the Hartford Institute of Geriatric Nursing Web site .
- Administering and interpreting the Mini-Cog. How to Try This video. Available from the Hartford Institute of Geriatric Nursing Web site .
- Delirium: the under-recognized medical emergency. How to Try This video. Available from the Hartford Institute of Geriatric Nursing Web site .
- The Hendrich II Fall Risk Model. How to Try This video. Available from the Hartford Institute of Geriatric Nursing Web site .
- Pain assessment in older adults. How to Try This video. Available from the Hartford Institute of Geriatric Nursing Web site .

The ConsultGeriRN app for mobile devices is available from the Hartford Institute for Geriatric Nursing Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on June 25, 2013. The information was verified by the guideline developer on August 6, 2013.

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